

REMARKS

The Applicant thanks the Examiner for the thorough consideration given the present application. Claims 1-3, 5-20, 22-56, 58-71, 73, and 74 are pending. Claims 4, 21, 57 and 72 are canceled without prejudice to or disclaimer of the subject matter contained therein. Claims 1, 2, 32, 32, 40, 41, 43, 45, 56, 60, and 71 are amended. Claims 1, 2, 32, 32, 40, 41, 43, 45, 56, 60, and 71 are independent. The Examiner is respectfully requested to reconsider the rejections in view of the amendments and remarks set forth herein.

Claim for Priority

It is gratefully acknowledged that the Examiner has recognized the Applicant's claim for foreign priority.

Acknowledgement of Information Disclosure Statement

It is gratefully acknowledged that the Examiner has acknowledged the Information Disclosure Statement filed on February 8, 2001.

Amendments to the Drawings

To overcome the Examiner's objection, twenty-four (24) sheets (FIGS. 1-17C) of revised formal drawings are attached.

Rejection Under 35 U.S.C. §102(b) and §103(a)

Claims 1, 2, 21-23, 27-30, 32-49, 53-64, and 68-74 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Schouhamer Immink (U.S. 5,790,056) in view of Schouhamer Immink (U.S. 5,920,272), and further in view of Schouhamer Immink (U.S. 5,642,113); and

claims 3-20, 24-26, 31, 51, and 52 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Schouhamer Immink (U.S. 5,790,056) in view of Schouhamer Immink

(U.S. 5,920,272), and further in view of Schouhamer Immink (U.S. 5,642,113); Iketani et al. (U.S. 4,760,378); and Bessios (U.S. 6,018,304).

These rejections are respectfully traversed.

Amendments to Independent Claims 1, 2, 32, 33, 40, 41, 43, 45, and 60

While not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the instant application, independent claims 1, 2, 4, 32, 33, 40, 41, 43, 45, and 60 amended herein to recite a combinations of method steps and elements, including the n-bit code words being divided into a first type and a second type and into coding states of a first kind and a second kind,

wherein an m-bit information word is represented by an n-bit code word of the first or the second kind if the previous n-bit code word is of the first type, and

an m-bit information word is represented by an n-bit code word of the first kind if the previous n-bit code word is of the second type,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

Included among the above claim changes, the Examiner will note that dependent claim 2 is now rewritten as independent claims, including the subject matter of the base and intervening claims.

Amendments to Independent Claims 56 and 71

While not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the instant application, claims 56 and 71 are amended herein to incorporate the subject matter of claims 57 and 72, respectively, and therefore now recite combinations of method steps and elements, including

receiving n-bit code words, where n is an integer;

determining a coding state of next n-bit code words; and

converting a current n-bit code word into an m-bit information word, where m is an integer less than n, based on the determined coding state,

wherein each of the n-bit code words belongs to a coding state, at least one of the coding states includes more than one of a same n-bit code word, the same n-bit code words map to more than one of the m-bit information words, and each of the same n-bit code words has a different state direction associated therewith, each of the state directions indicating a next one of the coding states from which to obtain the next n-bit code word when converting the m-bit information words into the n-bit code words,

wherein a minimum number of zeros (d) between consecutive ones in the n-bit code words is one zero, and

wherein the n-bit code words of the first type end in zero, the n-bit code words of the second type end in one, the n-bit code words in a coding state of the first kind start with zero, and the n-bit code words in a coding state of the second kind start with zero or one.

Full support for the above combinations of method steps and elements can be found in the specification, for example on page 9, lines 3-26, and FIG. 5, which disclose coding states of

the first and the second kind, and converting an m-bit information word into a n-bit of the first kind and the second kind.

Applicant respectfully submits that the combinations of elements and method steps as set forth in independent claims 1, 2, 32, 33, 40, 41, 43, 45, 56, 60, and 71 are not disclosed or made obvious by the prior art of record, including Schouhamer Immink (U.S. 5,790,056), Schouhamer Immink (U.S. 5,920,272), and Schouhamer Immink (U.S. 5,642,113).

Applicant respectfully submits that none of the cited teaches or suggests coding states of the first and the second kind, and converting an m-bit information word into a n-bit of the first kind and the second kind.

Thus, Applicant respectfully submits that the combination of method steps and elements as set forth in independent claims 1, 2, 32, 33, 40, 41, 43, 45, 56, 60, and 71 are not disclosed or made obvious by the prior art of record, including Schouhamer Immink (U.S. 5,790,056), Schouhamer Immink (U.S. 5,920,272), and Schouhamer Immink (U.S. 5,642,113), for the reasons explained above. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Further, the dependent claims are in condition for allowance due to their dependency from allowable independent claims, or due to the additional novel limitations set forth therein.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are respectfully requested.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject claims, but merely to show the state of the art, no comment need be made with respect thereto.

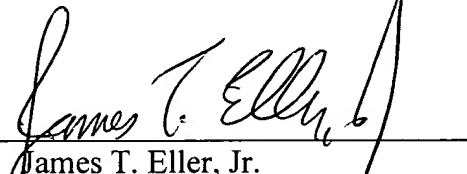
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.


If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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Attachments: Revised Formal Drawings